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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/531,167 | 04/11/2005 | Hans-George Lemaire | 268522US0PCT | 4830 |
| 22850 | 7590 | 01/11/2006 | EXAMINER | |
| OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314 | | | KHAN, AMINA S | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 1751 | |

DATE MAILED: 01/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|-------------------------------|--------------------------------|--|
| Office Action Summary | Application No. 10/531,167 | Applicant(s) LEMAIRE ET AL. | |
| | Examiner Amina Khan | Art Unit 1751 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04/11/2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 14-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 14-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>4/11/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 24 and 25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claim language "neutralized with acid and proteins" is unclear. The examiner is unclear as to how to neutralize the liquor with protein. The examiner interpreted the claim to read, neutralized with acid and then the proteins were separated off. Appropriate clarification of the claim language is required.

Claim 25 is rejected because it is dependent on claim 24.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 14-17 and 19-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Pfeiderer et al. (US 4,484,924).

The prior art of Pfeiderer et al. teaches processes of unhairing animal hides and skins (abstract) by treating hides and skins with 0.3-10% of chemical agents which

Art Unit: 1751

cleave sulfide bonds (column 4, line 25), specifically 1,4-dithioerythrol (column 3, line 64), which meets the claimed limitations of formula 1 as claimed in claim 14 and claim 19, urea (column 3, line 67), which meets the claimed limitations of claim 21, and 0.1-1% (column 4, line 53) serine proteases (column 4, line 39), which meets the claimed limitations of claims 14-17 and 20. Pfeiderer further teaches hides and pelts made by this process (column 5, lines 40-42 and 56-58), which meets the claimed limitation of claim 22.

Accordingly, the teachings of Pfeiderer et al. anticipate the material limitations of the instant claims.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 18 and 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pfeiderer et al. (US 4,484,924).

The prior art of Pfeiderer et al. is relied upon as set forth above. Pfeiderer further teaches serine protease enzymes with enzyme activity from 8,000-10,000 Loehlein-Volhard units (LVU) per gram of enzyme (column 4, lines 48-49), as claimed in claim 18. Pfeiderer further teaches opening of the hide structure following removal of the hair

by deliming through neutralization steps with commonly used deliming acids (column 5, lines 4-17) as claimed in claims 24 and 25.

Pfeiderer does not teach Loehlein Volhard activity in LVU/kg, melanin and degradation products of melanin, and separating off proteins from the liquor.

It would have been obvious to one of ordinary skill in the art at the time the invention was made that the residual liquor of an unhairing process would comprise melanin and the degradation products of melanin because melanin is a component of hair and would be present in the residual liquor in complete and degraded form after unhairing. It would also have been obvious to remove protein from the residual liquor because Pfeiderer et al. teaches "the major portion of the protein load of conventional lime liquors is eliminated in unhairing, the opening of the hide structure with alkali can be carried out by the recycling process. No liquors having a high protein or sulfide content that might adversely effect purification of waste waters by bidegradation are produced" (column 5, lines 62-68).

Regarding the enzyme activities, the prior art discloses the enzyme activity in LVU/g enzyme whereas the instant application discloses the enzyme activity in LVU/kg of animal hide. It would also have been obvious to arrive at enzymes with activity values of 500-2,000,000 LVU/kg based on the weight of the animal hide since the prior art and the instant application (page 7, lines 29-30) both teach serine proteases.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amina Khan whose telephone number is (571) 272-5573. The examiner can normally be reached on Monday through Friday, 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yogendra Gupta can be reached on (571) 272-1316. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Amina Khan, PhD
Patent Examiner
January 6, 2006

MARGARET EINSMANN
PRIMARY EXAMINER
GROUP 1100

